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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,857	06/07/2005	Assaf Shappir	ELGP-6715-US	7211
43214	7590	09/21/2006	EXAMINER	
TIAJOLOFF & KELLY CHRYSLER BUILDING, 37TH FL 405 LEXINGTON AVE NEW YORK, NY 10174			NGUYEN, DANG T	
			ART UNIT	PAPER NUMBER
			2824	

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/537,857		SHAPPIR ET AL.	
	Examiner		Art Unit	
	Dang T. Nguyen		2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 9 -14 and 19 is/are rejected.
- 7) ☒ Claim(s) 6 - 8 and 15 - 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/09/05</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Search history</u> . |

DETAILED ACTION

1. This action is responsive to the following communications: the Application filed on June 7, 2005.
2. Claims 1 – 19 are pending in this case. Claims 1, 9, and 19 are independent claims.

Information Disclosure Statement

3. Acknowledgment is made of applicant's Information Disclosure Statement (IDS) Form PTO-1449, filed on 12/09/05, and the cited information has been considered.

Claim Objections

4. Claims 9 and 19 objected to because of the following informalities: In claims 9 and 19, line 1, "erasing one or non-volatile" should be -- erasing one or more non-volatile --. Appropriate correction is required.

Drawings

5. Figures 1A, 1B, 2A, 2B, 3 and 4 should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

Art Unit: 2824

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 5, 9, 10, 12-14 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Wooldridge, Patent No. US 6,515,909 – filed Oct. 5, 2001.

Regarding independent claim 1, Wooldridge discloses a method of erasing one or more non-volatile memory ("NVM") cells comprising:

applying to the one or more NVM cells an erase pulse (Abstract, line 4) having a substantially non-constant voltage profile (Col. 1 lines 6-7).

Regarding dependent claim 2, Wooldridge discloses the method according to claim 1, wherein the voltage profile of the erase pulse is predefined (*inherent to circuit because in order to perform function of erasing, every voltage have to be defined*).

Regarding dependent claim 4, Fig. 1 of Wooldridge discloses the method according to claim 3, wherein the erase pulse is applied to each sub-set (Col. 6 lines 13-14) of the set of NVM cells in a staggered sequence (Fig. 3 [310A-310S]).

Regarding dependent claim 5, Fig. 5 of Wooldridge discloses the method according to claim 1, wherein the voltage profile of the erase pulse is dynamically adjusted based on feedback (Col. 8 lines 10-38).

Regarding independent claim 9, Wooldridge discloses a circuit for erasing one or non-volatile memory ("NVM") cells comprising, an erase pulse source (Abstract, line 4) to produce an erase pulse having a substantially non-constant voltage profile (Col. 1 lines 6-7).

Regarding dependent claim 10, Fig. 1 of Wooldridge discloses the circuit according to claim 9, wherein said erase pulse source comprises a charge-pump [160] (Col. 5 lines 22-24)

Regarding dependent claim 12, Fig. 1 of Wooldridge discloses the circuit according to claim 9, further comprising a cell select circuit [145] adapted to select to which cells of a set of NVM cells the erase pulse is applied (Col. 6 lines 25-53).

Regarding dependent claim 13, Fig. 1 of Wooldridge discloses the circuit according to claim 12, wherein said cell select circuit [145] is adapted to apply the erase pulse to each sub-set (Col. 6 lines 13-14) of the set of NVM cells in a staggered sequence (Fig. 3 [310A-310S]).

Regarding dependent claim 14, Wooldridge discloses the circuit according to claim 9, further discloses comprising a sensor to sense a characteristic of the erase pulse as it is being applied to the one or more NVM cells (Col. 6 lines 44-53).

Regarding independent claim 19, Fig. 1 of Wooldridge discloses a system for erasing one or non-volatile memory ("NVM") cells comprising:

A NVM array [138], and
an erase pulse source (Col. 1, lines 55-58) to produce an erase pulse (Col. 9 lines 23-25) having a substantially non-constant voltage profile (Col. 1 lines 6-7).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wooldridge, Patent No. US 5,966,386 – filed Oct. 12, 1999 in view of Pio, Patent No. US 6,643,184 B2, filed (1/24/02).

Wooldridge as applied to claims 2 and 10 above disclosed every aspect of applicant's claimed invention except for the erase pulse has a voltage profile selected from the group consisting of ramp-like, trapezoidal exponential-growth-like, asymptote-like and stepped.

Pio discloses the erase pulse having a trapezoidal shape (Col. 7 lines 47-48).

Wooldridge and Pio are common subject matter for erasing a flash memory. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Pio's trapezoidal shape into Wooldridge's voltage profile for the purpose of providing an actual constant electric field at the oxide layer of the transistors to be erased (Col. 9 lines 62-64).

Allowable Subject Matter

8. Claims 6 – 8 and 15 - 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 6 and 15, the prior art of record fails to anticipate or make obvious a method of erasing one or more non-volatile memory, in combination with other limitations, comprising: "a sensor selected from the group consisting of a current sensor, a voltage sensor, a current derivative sensor, and a voltage derivative sensor".

Dependent claims 7, 8, and 16 – 18 are allowed based on the allowance of the respective dependent claims 6 and 15 above.

Prior art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cohen et al. Pub. No.: US 2005/0105337 A1 Pub. Date: May 19, 2005

Contact Information

10. Any inquiry concerning this communication from the examiner should be directed

Art Unit: 2824

to Dang Nguyen, who can be reached by telephone at (571) 272-1955. Normal contact times are M-F, 8:00 AM - 4:30 PM.

Upon an unsuccessful attempt to contact the examiner, the examiner's supervisor, Richard Elms, may be reached at (571) 272-1869.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is (703) 305-3900. The faxed phone number for organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the Status of an application may be obtained from the patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or EBC@uspto.gov.

Dang Nguyen 9/13/2006

Anh Phung 9/18/06

**ANH PHUNG
PRIMARY EXAMINER**